

Notice of Allowability

Application No.

09/491,864

Examiner

Fred Ferris

Applicant(s)

TANYGIN, SERGEI

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 30 July 2004.
2. ☒ The allowed claim(s) is/are 23-25 and 27-32 (Now re-numbered as 1-9).
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 09302004.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 09302004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

JEAN R. HOMERE
PRIMARY EXAMINER

DETAILED ACTION

1. This office action is in response to applicant's amendment filed on 30 July 2004. Claims 23-32 are currently pending in this application. Applicants have now cancelled claims 1-22. Claim 26 is cancelled by the examiners amendment below. Claims 23-25 and 27-32 have now been allowed over the prior art of record.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Christopher B. Kilner (applicant's representative) on 30 September 2004. (See attached interview summary)

Replace claim 23 with the following:

23. A method for a spacecraft maneuver analyst to model orbital maneuver phenomena on a computer without needing to hard-code a software solution for new spatial objects, comprising:
defining an original coordinate system within a graphic user interface of said computer;
defining one or more parent spatial objects relative to said original coordinate system by selection of one or more pre-existing files from within said graphic user interface; and
creating at least one new spatial object based on said one or more parent spatial objects,
comprising:
defining said new spatial object relative to said one or more parent spatial objects,
comprising:

finding said new spatial object in each of said one or more parent spatial objects; and performing a building operation to obtain a combined transformation based on said parent spatial objects to create said new spatial object, wherein said one or more parent spatial objects and said at least one new spatial object are related to orbital maneuver phenomena.

Cancel claim 26.

Response to Arguments

3. Applicants arguments filed on 30 July 2004 have been fully considered and found to be persuasive. The rejection of claims 23-25 and 27-32 has now been withdrawn. (See Interview Summary dated 30 September 2003, response to Request for Information, and amendment filed 30 July 2004)

Regarding applicant's response to Request for Information under 37 C.F.R. § 1.105 and IDS issues: Applicants have complied with examiner's Request for Information under 37 C.F.R. § 1.105 and have sufficiently addressed IDS issues relating to the Astrogator module of the Satellite Tool Kit (STK) which are now made of record.

Regarding applicants response to 35 USC 101 rejection: The examiner withdraws the 35 USC 101 rejection in view of applicant's amendment to claims and arguments presented 30 July 2004.

Regarding applicants response to 35 USC 112(1&2) rejections: The examiner withdraws the 35 USC 112(1&2) rejections in view of applicant's amendment to claims, submission under 37 C.F.R. § 1.105, and arguments filed 30 July 2004 which are now made of record.

Regarding applicants response to 35 USC 103(a) rejections: The examiner withdraws the 35 USC 103(a) rejections in view of applicant's amendment to claims, the examiner amendment, and arguments presented 30 July 2004. (See interview summary dated 30 September 2003)

Drawings

4. Formal drawings are required since the case has now been allowed.

Allowable Subject Matter

5. Claims 23-25 and 27-32 have been allowed over the prior art of record.

The following is an examiner's statement of reasons for allowance:

Applicants are disclosing a method for analyzing spacecraft maneuvers between different coordinate systems using GUI software architecture to create vectors, axes, points, elements, coordinate systems, and define objects. These features are generally disclosed in the prior art of record. However, the prior art of record, while disclosing these features does not meet the conditions as suggested in MPEP section 2132, namely:

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."

In particular, the prior art of record does not explicitly disclose the specific sequence of steps and arrangement of elements for defining a new related spatial object relative to one or more parent spatial objects by finding new spatial objects among the parent spatial objects by performing a building operation and combined transformation based on the parent spatial objects that are representative of non-hard coded spacecraft orbital maneuvers, in the context of the claims.

The closest prior art uncovered during examination does not disclose the specific sequence of steps or arrangement of elements as cited above, but discloses certain elements of the claimed invention as follows:

"Space System Visualization and Analysis Using The Satellite Orbit Analysis Program (SOAP)", D. Stodden: discloses 3-D orbit analysis, a graphical user interface (GUI), and construction of coordinate systems.

U.S. Patent 5,717,848 issued to Watanabe et al: discloses finding target objects (parent/child) with 3-D geometric properties related to an objects motion.

Claims 24-25 and 27-32 are allowable as being dependent from independent claim 23.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.*

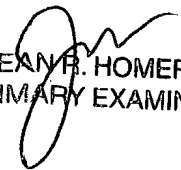
Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

The Official Fax Numbers are:

After-final	(703) 746-7238
Official	(703) 746-7239
Non-Official/Draft	(703) 746-7240

Fred Ferris, Patent Examiner
Simulation and Emulation, Art Unit 2123
U.S. Patent and Trademark Office
Crystal Park 2, Room 2A22
Crystal City, Virginia 22202
Phone: (703) 305 - 9670
FAX: (703) 305 - 7240
Fred.Ferris@uspto.gov

September 30, 2004


JEANNE B. HOMERE
PRIMARY EXAMINER